

1. A process for the recovery of lactic acid and products thereof from an aqueous solution containing free lactic acid and at least one lactate salt at a total concentration of at least 5%, said process comprising the steps of:
 - (a) extracting at least 70% of the free acid from said aqueous solution by contacting said acid-depleted, lactate salt-containing aqueous solution;
 - (b) separating said lactic acid-containing extract from said depleted aqueous solution;
 - (c) stripping said extracted lactic acid from said extract by methods known per se, to form a solution of lactic acid and stripped basic extractant;
 - (d) recovering lactic acid and products thereof from said lactate salt in said lactic acid-depleted aqueous solution by a method comprising extraction with a basic extractant, substantially as obtained in step (c), to form lactic acid containing extractant; and
 - (e) using said lactic acid-containing extractant from step (d), substantially as is, as said basic extractant in step (a).
2. A process according to claim 1, wherein the ratio between said free lactic acid and said lactate salt is between 1:9 and 5:1.
3. A process according to claim 1, wherein the ratio between said free lactic acid and said lactate salt is between 1:9 and 3:1.
4. A process according to claim 1, wherein said basic extractant comprises a portion of lactic acid and said solution is contacted with said extractant to form an extract comprising lactic acid in an amount greater than said portion and a lactic acid-depleted, lactate salt-containing aqueous solution.
5. A process according to claim 1, wherein said adjustment comprises adding a polar solvent.
6. A process according to claim 1, wherein said adjustment comprises removing a polar solvent.
7. A process according to claim 1, wherein the ratio of free lactic acid to lactate salt is up to 2:1.
8. A process according to claim 1, wherein the basic extractant used in step (a) comprises at least 3% of the lactic acid extracted in a previous step.
9. A process according to claim 1, wherein said aqueous solution is concentrated by water evaporation prior to step (a).

10. A process according to claim 1, wherein said aqueous solution containing free lactic acid and lactate salt is a result of fermentation.

11. A process according to claim 1, wherein said lactate salt is selected from the group consisting of calcium lactate, sodium lactate and ammonium lactate.

12. A process according to claim 1, wherein said basic extractant in step (a) has a basicity corresponding to pKa lower than 7.

13. A process according to claim 1, wherein:

said basic extractant in step (a) is recycled from a previous step;

said lactic acid-loaded extract obtained in step (a) is stripped to form a solution of purified lactic acid and said stripped extractant;

said stripped extractant obtained in step (c) is used for the recovery of lactic acid from said lactate salt in step (d); and

the lactic acid-comprising extract formed in step (d) is used for extraction of free lactic acid in step (a).

14. A process according to claim 1, wherein said recovery of lactic acid from said lactate salt in step (a) is effected under CO_2 pressure.

15. A process according to claim 1, wherein said recovery of lactic acid and products thereof from said lactate salt in said lactic acid-depleted aqueous solution is achieved by using an acid stronger than lactic acid.

16. A process according to claim 14, wherein said stronger acid is sulfuric acid, and a sulfate salt is formed as a by-product.

17. A process according to claim 1, wherein said recovery of lactic acid and products thereof from said lactate salt in said lactic acid-depleted aqueous solution is achieved through the use of electric energy.

18. A process for the recovery of lactic acid and products thereof from an aqueous solution containing free lactic acid and at least one lactate salt at a total concentration of at least 5%, said process comprising the steps of:

(a) extracting at least 70% of the free acid from said aqueous solution by contacting said acid-depleted, lactate salt-containing aqueous solution;

(b) separating said lactic acid-containing extract from said depleted aqueous solution;

(c) stripping said extracted lactic acid from said extract by methods known per se, to form a solution of lactic acid and stripped basic extractant;

(d) recovering lactic acid and products thereof from said lactate salt in a portion of said lactic acid-depleted aqueous solution by a method comprising extraction with a basic extractant, substantially as obtained in step (c), to form lactic acid containing extractant; and

(e) using said lactic acid-containing extractant from step (d), substantially as is, as said basic extractant in step (a).

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